

**Draft Minutes
Upper Oyster Creek TMDL Steering Committee
July 12, 2007**

Stakeholders Present:

Al Abramczyk—Sugar Lakes Homeowners Association
Tricia Bradbury—Keep Sugar Land Beautiful
Jay Bragg—Brazos River Authority
Millie Holifield (substituting for Scott Elmer)—City of Missouri City
David Jalowy—Fort Bend County Drainage District
Adam Smith—City of Sugar Land
Joe Taylor—Quail Valley Utility District

Stakeholders Absent:

Larry Kent—Texas Department of Criminal Justice (TDCJ)
Martha Martin—Imperial Sugar
Lisa Rogers—Sierra Club
David Sauer—Gulf Coast Water Authority

Others Present: Steve Barry—Jones & Carter, Inc.; Justin Bower, Howard Christian, Mike Hobbs and Michael Leech—City of Sugar Land; John Ellis—Quail Valley Utility District; Gregg Haan—LJA, Inc. (representing Fort Bend County MUD # 134); David Matherne—Fort Bend County WCID #2; Kendria Ray—Texas State Soil & Water Conservation Board; Dave Scholler—Brown & Gay, Inc.; Bill Zollman—Costello, Inc.

Support Staff: Linda Broach and Jason Leifester—TCEQ; Bing Du and Larry Hauck—TIAER.

Administrative Issues

The Upper Oyster Creek Dissolved Oxygen and Bacteria TMDL Watershed Steering Committee met Thursday, July 12th from 1:45-3:45 pm at the City of Sugar Land Lost Creek Park facility. Larry Hauck, TIAER, opened the meeting and self-introductions were made. The committee approved the minutes from the May 10, 2007 meeting.

Status of Bacteria TMDL

Jason Leifester provided a brief statement that the Upper Oyster Creek bacteria TMDL report was on the August 8th Texas Commission on Environmental Quality Commissioners' agenda for their consideration. Subsequent discussions led to an overview of the joint Texas Commission on Environmental Quality and Texas State Soil & Water Conservation Board bacteria task force and their report. TIAER indicated that the web link to the report would be provided.

Status of Dissolved Oxygen TMDL

Dr. Hauck provided the status of the dissolved oxygen TMDL. He provided an overview of the relevant criteria and the results and findings of 24-hour dissolved oxygen

assessment monitoring performed during the Index Period of years 2003, 2004, and 2005. The assessment confirmed nonsupport of the intermediate aquatic life use for many portions of Upper Oyster Creek. Dr. Hauck also provided an overview of the TMDL allocation process and discussed QUAL2K, which is the dissolved oxygen computer model to be applied to conduct the allocation process. The QUAL2K validation for allocation reaches 1 and 2 was presented.

The preliminary results of QUAL2K applications to allocation reach 1 were then presented by Dr. Hauck. For the low flow, critical temperature allocation scenario, the model preliminary results indicated that most of the wastewater treatment facilities (WWTFs) discharging into allocation reach 1, including into Stafford Run and Steep Bank Creek tributaries, would need to go to the following limits: 5-day carbonaceous biochemical oxygen demand (CBOD₅) = 5 mg/L; ammonia (NH₃-N) = 2 mg/L; and dissolved oxygen (DO) = 6 mg/L in order to meet the pertinent average DO criteria. These limits represented substantially more stringent requirements than presently found in WWTF permits within allocation reach 1. Further simulations of the period November-February indicated that existing permit limits would meet the average DO criteria without the need for more stringent limits, because water temperatures are cooler during this time period. Dr. Hauck explained the model predictions indicated feasibility of different, seasonal WWTF permit limits for the two periods of March-October and November-February. Graphics were also presented showing the average of recent self-reporting data from each WWTF for DO, CBOD₅, and NH₃-N. These graphics of averages indicated that the WWTFs were generally operating at lower discharge concentrations than the preliminary new limits would require.

A number of stakeholders and consultants present representing various WWTFs expressed concerns with these preliminary findings and commented upon the practical implications of these preliminary findings. The stated implications included the great expenses of upgrading the existing WWTFs to consistently meet these stricter limits and to meet TCEQ design standards at these more stringent limits. Joe Taylor of Quail Valley Utility District also observed that these QUAL2K simulations addressed the 24-hr average DO and not the minimum daily DO, which was the main cause of impairment in allocation reach 1. Dr. Hauck explained that the preliminary model applications indicated that nutrient limits, in particular phosphorus limits, were imposed on the WWTFs within the model to see if nutrient removal would significantly impact the 24-hr swings in DO by reducing aquatic vegetation simulated in the model that causes the low minimum concentrations. The model results indicated that the reach 1's aquatic vegetation and minimum DOs were largely unresponsive to the imposition of nutrient removal in the WWTFs. Dr. Hauck explained that the lack of responsiveness of the minimum DO to WWTF nutrient removal scenarios using QUAL2K was also scientifically anticipated, because reach 1 is in many areas dominated by macrophytes, which obtain their nutrients through root systems and thus typically show limited response to changes in water column nutrients.

Dr. Hauck then presented the QUAL2K results for allocation reach 2. Because of the pronounced seasonal pattern of Brazos River water pumping into reach 2, a seasonal

analysis was performed using QUAL2K. The preliminary results indicated that the critical area of DO was in the lower portion of the Red Gully tributary and in Oyster Creek below that tributary and to Dam #1, which is an area where the creek is slow moving and deep. The most critical time period occurred for the month of September, at which time low flows and high water temperatures may be experienced in the system concurrently. The preliminary results indicated that to meet the average DO criterion, one of the MUDs discharging into Red Gully would need to reduce its present $\text{NH}_3\text{-N}$ permit limit to 2 mg/L. All other WWTFs could remain at present permit limits. It was further mentioned that the simulations of reach 2 included several pending and recent facilities; all of which operate with large polishing ponds, and because of their extended detention times, these facilities were considered to discharge CBOD and $\text{NH}_3\text{-N}$ at background concentrations.

This presentation of allocation reach 2 led to several points of discussion that included whether or not the simulated conditions addressed existing DO impairments and did these simulations consider future growth and the increased reliance on surface water. Dr. Hauck responded regarding DO impairments that analyses of available data found no connection of 24-hr average and minimum DO exceedances to readily explainable causative factors such as WWTF discharges, antecedent rainfall, and water quality constituents measured at the time of the exceedances. Therefore the approach taken was to provide protection of reach 2 against the known sources, including WWTFs. Several attendees mentioned information on growth projections for the area and indications of how shifting from groundwater to surface water should increase pumping of Brazos River water into reach 2. Dr. Hauck indicated that he would follow up on sources of information on population growth and surface water increases. Some in attendance expressed frustrations that from one perspective the simulations did not seem to be correcting the DO impairments, but from another perspective Upper Oyster Creek, especially reach 1, is just another small urban creek with extensive hydrologic modifications. Some discussion also focused on allocation reach 1, which is hydrologically disconnected from reach 2 during low flows by Dam # 3, and whether this reach actually could support an Intermediate Aquatic Life Use or was its use more likely to be Limited.

Meeting Wrap-up

The meeting was concluded at approximately 3:45 PM.